

State of Washington

Water Measurement Device Installation and Operation Requirements

Open channel flow measuring devices

Below is a summary of the major requirements for open channel flumes, weirs and orifices. This sheet is intended to assist users in understanding the most important portions of the rule, but does not include all the requirements from the rule. For additional detail and information on requirements, see "Requirements for Measuring and Reporting Water Use," WAC 173-173.

- At any flow rate measured by the measuring system (the measuring device plus any secondary equipment such as data recorders), the system shall register between 90% and 110% of the water actually passing through the system. Measuring facilities shall be operated and maintained to ensure that discharge can be measured accurately.
- The measuring facility shall be installed or constructed in accordance with the manufacturer's and/or designer's specifications.
- Measuring devices and facilities must register and be calibrated for the full range of discharge for which they are to be used. In determining a stage-discharge relation, the distribution of open channel flow measurements shall be sufficient to establish a full range of values for the entire stage-discharge relation.
- Rating curves shall be recalculated when there is a change in channel conditions that significantly alters flow across the control or once a year, whichever is more frequent.
- There shall be no turnouts or diversions between the source of water and the measuring devices and facilities, except for faucets or other small outlets that have a *de minimis* effect on the diversion or withdrawal. All flow diverted shall be measured as close to the point of diversion as possible.
- No withdrawal or diversion of water shall be made unless the measuring devices and facilities are in proper operating condition, except when a measuring device or facility is being repaired and a substitute measuring device or other method to measure the diversion or withdrawal is used.
- If the measuring system has no continuous stage recorder, an observer shall read the staff gage and record the reading as close in time as is practical before and after changes in regulation of flow occur.